

SEQUENCE LISTING

<110> Olsen, Arne
Roggen, Erwin
Ernst, Steffen

<120> Low Allergenic Protein Variants

<130> 5676.210-US

<160> 101

<170> PatentIn version 3.2

<210> 1
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 1

Pro Arg Ser Asp Pro Gly Thr Pro Thr
1 5

<210> 2
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 2

Pro Arg Thr Asp Pro Gly Trp Leu Ala
1 5

<210> 3
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 3

Pro Ser Ser Asp Pro Gly Ala Arg Ser
1 5

<210> 4

<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 4

Trp Pro Lys Ser Asp Ala Gly Asp Ser
1 5

<210> 5
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 5

Gly Pro Ser Arg Asp Ala Gly Leu Leu
1 5

<210> 6
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 6

Gly Pro Ser Arg Asp Ala Gly Leu Leu
1 5

<210> 7
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 7

Gly Ala Ala Arg Asp Ala Arg Ser Ala
1 5

<210> 8
<211> 9

<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 8

His Val Phe Asp Lys Asn Val Thr Arg
1 5

<210> 9
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 9

Gln Leu Tyr Gly Asp Glu Gln Leu Pro
1 5

<210> 10
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 10

Gly Ser Ala Thr Ile Asp Pro Arg Gln
1 5

<210> 11
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 11

His Glu Tyr Pro Met Asp Phe His Leu
1 5

<210> 12
<211> 9
<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 12

Ser Glu Tyr Ser Met Ser Ile Thr Pro
1 5

<210> 13

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 13

Pro Glu Tyr Thr Met Asn Ala Leu Ser
1 5

<210> 14

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 14

Gln Arg Pro Pro Arg Tyr Glu Leu Glu
1 5

<210> 15

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 15

Arg Lys Leu Thr Leu Ser Gly Arg Ser
1 5

<210> 16

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 16

Thr Arg Tyr His Arg Arg Pro Pro Leu
1 5

<210> 17

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 17

Ser Arg Tyr Asn Lys Lys Pro His Leu
1 5

<210> 18

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 18

Asn Lys Leu Ala Thr Arg Glu Pro Met
1 5

<210> 19

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 19

Val Asn His Phe Arg Lys Arg Ser Ala
1 5

<210> 20

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 20

Arg Gly Leu Ser Met Ile Met Gly Lys

1

5

<210> 21

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 21

Val His Ala Gly Pro Arg Ala Gly Thr

1

5

<210> 22

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 22

Val His Ser Gly Pro Arg Ala Gly Tyr

1

5

<210> 23

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 23

Val His Ala Gly Pro Arg Ala Gly Thr

1

5

<210> 24

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 24

Val His Ala Gly Pro Arg Ala Gly Thr
1 5

<210> 25

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 25

Val His Ala Gly Pro Arg Ala Gly Thr
1 5

<210> 26

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 26

Val Thr Arg Gly Pro Asn Ala Gly Ser
1 5

<210> 27

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 27

Val His Ala Gly Pro Arg Ala Gly Thr
1 5

<210> 28

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 28

Val His Ser Gly Pro Arg Ala Gly Tyr
1 5

<210> 29

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 29

Val His Ala Gly Pro Arg Ala Gly Thr
1 5

<210> 30

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 30

Val His Ala Gly Pro Arg Ala Gly Thr
1 5

<210> 31

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 31

Val His Ala Gly Pro Arg Ala Gly Thr
1 5

<210> 32

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 32

Val Thr Arg Gly Pro Asn Ala Gly Ser
1 5

<210> 33

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 33

Leu Ser Gly Pro Leu Ala Gly Arg Val
1 5

<210> 34

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 34

Phe Asn Asp Ala Phe Phe Val Lys Met
1 5

<210> 35

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 35

Thr Phe His Asp Ala Pro Ala Leu Gln
1 5

<210> 36

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 36

Thr Phe His Asp Ala Pro Ala Leu Gln
1 5

<210> 37
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 37

Asp Phe His Val Lys Tyr Ala Ala Gln
1 5

<210> 38
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 38

Ala Asn Pro Ile Trp Ser Arg Ser Ala
1 5

<210> 39
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 39

Thr Ala Arg Leu Arg Ala Gly Asn Ala
1 5

<210> 40
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 40

Arg Ala Phe Arg Arg Asn Ala Asn Trp
1 5

<210> 41
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 41

Thr Arg Tyr His Arg Arg Pro Pro Leu
1 5

<210> 42
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 42

Ser Arg Tyr Asn Lys Lys Pro His Leu
1 5

<210> 43
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 43

Arg Arg Tyr Pro Lys Leu Met Pro Pro
1 5

<210> 44
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 44

Arg Arg Tyr Ser Gln Arg Thr Ile Gln

1 5

<210> 45
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 45

Cys Val His Ser Gly Pro Arg Ala Gly Tyr Cys Gly
1 5 10

<210> 46
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 46

Cys Ile Thr Ser Gly Pro Arg Ala Gly Asn Cys Gly
1 5 10

<210> 47
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 47

Cys Leu Ser Gly Pro Leu Ala Gly Arg Val Cys Gly
1 5 10

<210> 48
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 48

Pro Arg Ser Asp Pro Gly Thr Pro Thr
1 5

<210> 49
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 49

Pro Arg Thr Asp Pro Gly Trp Leu Ala
1 5

<210> 50
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 50

Pro Ser Ser Asp Pro Gly Ala Arg Ser
1 5

<210> 51
<211> 8
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 51

Pro Arg Ser Asp Thr Gly Phe Gly
1 5

<210> 52
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 52

Asp Pro Val Arg Asp Thr Gly Ala Gly
1 5

<210> 53
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 53

Asp Pro Ala Arg Asp Thr Gly Asp Val
1 5

<210> 54
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 54

Arg Ala Phe Arg Arg Asn Ala Asn Trp
1 5

<210> 55
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 55

Cys Thr Ala Arg Leu Arg Ala Gly Asn Ala Cys Gly
1 5 10

<210> 56
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 56

Cys Thr Ala Arg Val Val Ala Leu Gly Val Cys Gly
1 5 10

<210> 57
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 57

Phe Cys Thr Asn Asn Cys Glu Leu Ser
1 5

<210> 58
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 58

Arg Arg Phe Ser Asn Asn Asp Glu Leu
1 5

<210> 59
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 59

Lys Arg Phe Ala Asn Thr Glu Leu Ala
1 5

<210> 60
<211> 8
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 60

Arg Arg Phe Ser Asn Ala Thr Ala
1 5

<210> 61

<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 61

Arg Arg Phe Ser Asn Asn Asp Glu Leu
1 5

<210> 62
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 62

Lys Arg Phe Ala Asn Thr Glu Leu Ala
1 5

<210> 63
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 63

Lys Arg Phe Ala Asn Thr Glu Pro Ala
1 5

<210> 64
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 64

His Glu Tyr Asp Met Arg Val Ala Trp
1 5

<210> 65
<211> 9

<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 65

Ser Glu Tyr Ser Met Ser Ile Thr Pro
1 5

<210> 66
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 66

Pro Glu Tyr Thr Met Asn Ala Leu Ser
1 5

<210> 67
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 67

Leu Glu Tyr Pro Met Ser Ala Ser Gln
1 5

<210> 68
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 68

Cys Ser Phe Pro Leu Pro Ala Pro Arg Ser Cys
1 5 10

<210> 69
<211> 11
<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 69

Cys Leu Phe Pro Ser Pro Ala Pro Arg Ser Cys
1 5 10

<210> 70

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 70

Cys Asp Gly Pro Ala Pro Ala Pro Trp Ser Cys
1 5 10

<210> 71

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 71

Cys Val Tyr Pro Ser Pro Ala Pro Trp Ser Cys
1 5 10

<210> 72

<211> 8

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 72

Ala Lys Ile Asp Pro Lys Pro Asp
1 5

<210> 73

<211> 11

<212> PRT

<213> Artificial

<220>
 <223> Synthetic

 <400> 73

 Cys Ser Val Ala Lys Ile Asp Pro Arg Thr Cys
 1 5 10

<210> 74
 <211> 11
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic

<400> 74

 Cys Gly Ser Ala Thr Ile Asp Pro Arg Gln Cys
 1 5 10

<210> 75
 <211> 9
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic

<400> 75

 Arg Tyr Ala Gln Ile Asp Pro Arg Trp
 1 5

<210> 76
 <211> 11
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic

<400> 76

 Cys Asn Ala Asp Ser Trp Gly Tyr Pro Arg Cys
 1 5 10

<210> 77
 <211> 11
 <212> PRT
 <213> Artificial

<220>

<223> Synthetic

<400> 77

Cys Asp Ala Ala Ser Ser Gly Tyr Pro Leu Cys
1 5 10

<210> 78

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 78

Cys Asp Ala Asp Asp Arg Arg Tyr Pro Arg Cys
1 5 10

<210> 79

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 79

Cys Asn Ala Asp Asn Gln Met Tyr Pro Gln Cys
1 5 10

<210> 80

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 80

Gly Ala Ala Arg Asp Ala Arg Ser Ala
1 5

<210> 81

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 81

Val Asn His Phe Arg Lys Arg Ser Ala
1 5

<210> 82

<211> 21

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 82

Cys Ser Arg Ser Ala Lys Ala Arg Leu Cys Cys Ser Arg Ser Ala Lys
1 5 10 15

Ala Arg Leu Cys Gly
20

<210> 83

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 83

Ala Asn Pro Ile Trp Ser Arg Ser Ala
1 5

<210> 84

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 84

Arg Lys Leu Thr Leu Ser Gly Arg Ser
1 5

<210> 85

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 85

Gly Glu Phe Asn Leu Gly Arg Ser Ser
1 5

<210> 86

<211> 9

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 86

Gly Arg Phe Ser Asn Ser Lys Phe Lys
1 5

<210> 87

<211> 6

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 87

Ala Ala Pro Phe Asn Pro
1 5

<210> 88

<211> 4

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 88

Arg Tyr Pro Arg
1

<210> 89

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 89

Lys Ser Gly Pro Arg Ala Gly

1 5

<210> 90

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 90

Thr Pro Arg Ser Asp Pro Gly

1 5

<210> 91

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 91

Lys Asp Pro Arg Asp Thr Gly

1 5

<210> 92

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 92

Ala Arg Arg Ala Asn

1 5

<210> 93

<211> 4

<212> PRT

<213> Artificial

<220>
<223> Synthetic

<400> 93

Asn Asn Glu Leu
1

<210> 94
<211> 6
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 94

Arg Arg Phe Ala Asn Glu
1 5

<210> 95
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 95

Lys Ser Asp Glu Tyr Met Pro Pro Ala Pro Ser
1 5 10

<210> 96
<211> 6
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<400> 96

Ala Lys Ile Asp Pro Arg
1 5

<210> 97
<211> 7
<212> PRT
<213> Artificial

<220>

<223> Synthetic

<400> 97

Lys Ala Asp Ser Gly Tyr Pro
1 5

<210> 98

<211> 4

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 98

Ser Arg Ser Ala
1

<210> 99

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<400> 99

Leu Gly Arg Ser Ser
1 5

<210> 100

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Synthetic

<220>

<221> Misc_feature

<222> (1)..(1)

<223> Xaa denotesd Ser or Thr

<400> 100

Xaa Asn Asn Glu Leu
1 5

<210> 101

<211> 4
<212> PRT
<213> Artificial

<220>
<223> Synthetic

<220>
<221> misc_feature
<222> (4)..(4)
<223> Xaa denotes Arg or Lys

<400> 101

Arg Tyr Pro Xaa
1